

AMENDMENTS TO THE CLAIMS

The following is a complete listing of the claims indicating the current status of each claim and including amendments currently entered as highlighted.

24. (New) An electrochemical device for scale treatment in water supply systems, the device comprising:

- (a) an electrochemical cell including:
 - (i) a metallic tank for receiving a water supply, said tank forming a cathode of said electrochemical cell; and
 - (ii) at least one anode, disposed within said tank;

said electrochemical cell for operatively connecting to an electrical power supply, said electrochemical cell operative to produce a pH above 12 near a wall of said tank, so as to form a scale deposition on said wall, thereby removing said deposition from said water supply;

- (b) an elastic scraper disposed within said tank, said scraper operative for scraping said wall of said tank; and

- (c) a control system for said elastic scraper, said control system designed and configured to activate said scraper so as to promote said scale deposition on said wall,

and wherein said control system includes at least one parameter, said at least one parameter for triggering said scraper to scrape said wall, wherein said parameter is associated with a thickness of said scale deposition, said thickness reaching up to a maximum thickness of 800 microns.

25. (New) The electrochemical device of claim 24, wherein said parameter is for measuring a physical property associated with said thickness of said scale deposition.

26. (New) The electrochemical device of claim 25, wherein said physical property is electrical resistance, and wherein said control system is designed and configured to activate said scraper responsive to a differential in said electrical resistance.

27. (New) The electrochemical device of claim 24, wherein said control system includes a timing mechanism, said timing mechanism being designed and configured to trigger said scraper according to a pre-determined time parameter, so as to achieve said maximum thickness of 2000 microns.

28. (New) The electrochemical device of claim 27, wherein said pre-determined time parameter is a fixed time interval.

29. (New) The electrochemical device of claim 28, wherein said fixed time interval is up to 12 hours.

30. (New) The electrochemical device of claim 28, wherein said fixed time interval is up to 1 hour.

31. (New) The electrochemical device of claim 24, wherein said electrical power supply is designed and configured to supply a pre-determined constant current.

32. (New) The electrochemical device of claim 25, wherein said control system is designed and configured to activate said scraper according to a combined function including said physical property and a pre-determined time parameter.

33. (New) The electrochemical device of claim 24, wherein said control system is adapted to reduce a calcium hardness in a water flow delivered to said electrochemical cell below 200 ppm, on a CaCO_3 basis, and to maintain said calcium hardness at a level below about 110 ppm, on said basis.

34. (New) The electrochemical device of claim 24, wherein said control system is adapted to reduce a calcium hardness in a water flow delivered to said electrochemical cell and to maintain said calcium hardness at a level below about 85 ppm, on a CaCO_3 basis.

35. (New) The electrochemical device of claim 24, wherein said control system is adapted to reduce a calcium hardness in a water flow delivered to said electrochemical cell and to maintain said calcium hardness at a level below about 55 ppm, on a CaCO_3 basis.

36. (New) The electrochemical device of claim 24, wherein said maximum thickness is 500 microns.

37. (New) An electrochemical device for scale treatment in water supply systems, comprising:

(a) an electrochemical cell including:

- (i) a metallic tank for receiving a water supply, said tank forming a cathode of said electrochemical cell; and
- (ii) at least one anode, disposed within said tank;

said electrochemical cell for operatively connecting to an electrical power supply, said electrochemical cell operative to produce a pH above 12 near a wall of said tank, so as to form a scale deposition on said wall, thereby removing said deposition from said water supply;

(b) an elastic scraper disposed within said tank, said scraper operative for scraping said wall of said tank; and

(c) a control system for said elastic scraper, said control system

designed and configured to supply a predetermined constant current for activating said scraper so as to promote said scale deposition on said wall,

and wherein said control system includes at least one parameter for triggering said scraper to scrape said wall, wherein said parameter is associated with a thickness of said scale deposition, said thickness reaching up to a maximum thickness of 800 microns.

38. (New) The electrochemical device of scale treatment of claim 36, wherein said control system includes a timing mechanism, said timing mechanism being designed and configured to trigger said scraper according to a pre-determined time parameter.

39. (New) The electrochemical device of scale treatment of claim 38, wherein said pre-determined time parameter is a fixed time interval.

40. (New) An electrochemical method of scale treatment in water supply systems, the method comprising the steps of:

- (a) providing a system including:
 - (i) an electrochemical cell including:
 - (I) a metallic tank for receiving a water supply, said tank forming a cathode of said electrochemical cell; and
 - (II) at least one anode, disposed within said tank;
 - (ii) an elastic scraper disposed within said tank, said scraper operative for scraping a wall of said tank;
- (b) operating said cell so as to operatively produce a pH above 12 near said wall of said tank, so as to form a scale precipitate on said wall, thereby removing said precipitate from said water supply; and
- (c) controlling an operation of said scraper, based on at least one parameter, so as to promote said scale deposition on said wall,

wherein said parameter is associated with a thickness of said scale deposition, said thickness reaching up to a maximum thickness of 800 microns.

41. (New) The electrochemical method of claim 40, wherein said at least one parameter includes both:

- (i) a physical property associated with said thickness of said scale deposition, and
- (ii) a pre-determined time parameter.

42. (New) The electrochemical method of claim 41, wherein said controlling utilizes said physical property and said pre-determined time parameter to reduce a calcium hardness in a water flow delivered to said electrochemical cell and to maintain said calcium hardness at a level below about 110 ppm, on a CaCO_3 basis.

43. (New) The electrochemical method of claim 41, wherein said controlling utilizes said physical property and said pre-determined time parameter to reduce a calcium hardness in a water flow delivered to said electrochemical cell and to maintain said calcium hardness at a level below about 85 ppm, on a CaCO_3 basis.

44. (New) The electrochemical method of claim 41, wherein said controlling utilizes said physical property and said pre-determined time parameter to reduce a calcium hardness in a water flow delivered to said electrochemical cell below 200 ppm, on a CaCO_3 basis, and to maintain said calcium hardness at a level below about 110 ppm, on said basis.